

ISAT Item Mapping

The Question: Are the ISAT test items appropriately distributed over the content domains and range of difficulty?

The Importance of the Matter: The purpose of ISAT is to measure the content expectations adopted by the State Board of Education. Therefore, the test must be designed to report student knowledge and skills within various subscore categories representing the important groupings within the expectations. Moreover, the difficulty of the items must be appropriate to measure the full range of students who naturally vary considerably in knowledge and skill.

Methodology of Research:

Item mapping is accomplished by inspecting each test question and matching it to Content Standards. The ISAT, however, is organized by NWEA Reporting Goals that are not necessarily consistent with the Idaho content expectations, thus complicating the analysis.

The item mapping study also matched each test item to the four achievement levels used to report students' skills (e.g., "Proficient"). The goal is to have a sufficient number of items distributed over each of the levels so student performance can be accurately classified.

The results of the mapping study are displayed as bar graphs showing the reporting categories each item measures and the achievement level at which the item measures student performance.

Because the ISAT consists of "on-grade level items" and "adaptive items," analyses were completed for both.

Synopsis of Findings:

The study revealed that the test items are not always uniformly distributed across the four achievement levels (advanced, proficient, basic and below basic). Some of the tests included more items measuring in the lower two achievement levels while others concentrated items within the highest two levels.

In some cases, there were insufficient numbers of items measuring student performance at the "Advanced" level. The adaptive portion of the tests appear to be properly selecting items for students based on the estimation of their proficiency level as determined by the core items.

There appear to be some inconsistencies in the mapping of items to the Content Standards, as opposed to the NWEA "Reporting Goals." For example, a fourth grade goal of "reading technical information" was not measured at all. Two other goals at grade ten were not measured. There is no guiding principle for ISAT test blueprints that specifies the number of items per Idaho content standard that will guide formation of each test.

Implications for Future Direction:

The ISAT item mapping can be improved by two basic changes: (1) Create improved test blueprints and item specifications and (2) Re-examine use of NWEA “Reporting Goals” to better concentrate on the measurement and reporting of Idaho content expectations.

Items should be properly matched to specific Content Standards and spread across the four achievement levels. Because determination of which students are “Proficient” is important for “No Child Left Behind” accountability, it may be preferable to have somewhat more items concentrated around the cut-score for this level for greater accuracy of classification. Steps should be undertaken at the test assembly stages to guarantee that each test item is selected to measure the specified content across the range of student performance.

[Report: Idaho Standards Achievement Test: Item Mapping for the 2004 Idaho Standards Achievement Tests](#)